Supporting Information

Aronsson, M. and Persson, J. between goals and the scale of actions constrain adaptive carnivore management: the case of the wolverine in Sweden

Appendix S1

For a wolverine reproduction to be *considered certain* within the Scandinavian monitoring program requires that one of the following criteria are fulfilled (SEPA & Rovdata, 2013a): 1) Monitoring personnel has observed wolverine cub/-s or tracks of cubs but not obtained photo documentation, 2) monitoring personnel has documented wolverine tracks of different ages leading to and from a hole in the snow at a suspected den site during 3 visits over at least 21 days if a reproduction has been documented at the site previously, or 4 visits over at least 28 days if a reproduction has not been documented at the site previously, or, 3) monitoring personnel document wolverine tracks of different ages leading to and from a hole in the snow at a suspected den site during at least one visit, and the suspected den site is inspected after snow melt. At this inspection, at least 4 of the following 6 signs of activity must be documented at the site (SEPA & Rovdata, 2014); i) remains from >1 prey individual, ii) a substantial amount of scats at latrines, iii) ≥ 2 daybeds, iv) wool from wolverine cubs, v) bite marks on ground vegetation at ≥ 2 places, and vi) distinct tunnel system is seen on the ground, in the vegetation or in remaining snow.

SEPA (Swedish Environmental Protection Agency). (2014). National management plan for wolverines – management period 2014-2019. Naturvårdsverket. [In Swedish]. ISBN 978-91-620-0000-0.

SEPA & Rovdata. 2013a. Wolverine: Instructions for documentation of reproductive events. – Methods for monitoring of large carnivores in Sweden and Norway. [in Swedish] ISBN: 978-91-620-8689-3.

Table S1. Period activated, total number of wolverine visits and time from deployment to first visit for each camera station.

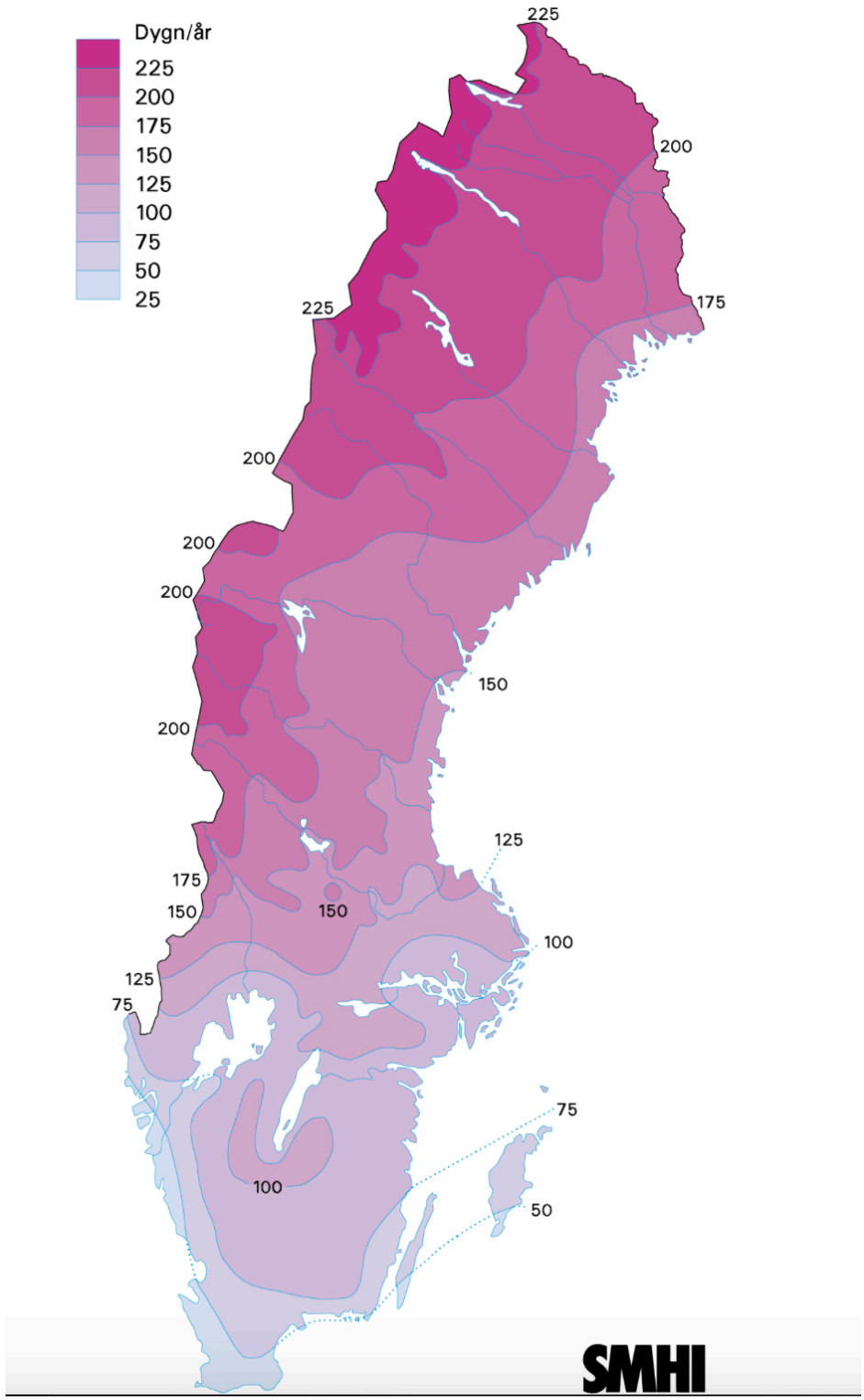
Camera station	Period active	Camera days	Wolverine visits*	Days to first visit*
1	15/2/2013 – 15/1/2015	699	12(5)	8(100)
2	6/3/2013 – 29/10/2014	602	4(0)	2(-)
3	26/2/2013 – 15/1/2015	688	29(21)	219(225)
4	6/3/2013 – 15/1/2015	680	6(5)	67(351)
5-1**	4/3/2013 – 3/10/2013	213	0	-
5-2**	3/3/2014 – 15/1/2015	318	10(4)	7(40)
6	4/3/2013 – 15/1/2015	682	5(4)	34(58)

* Wolverine photographed on the ground (wolverine photographed on run pole)

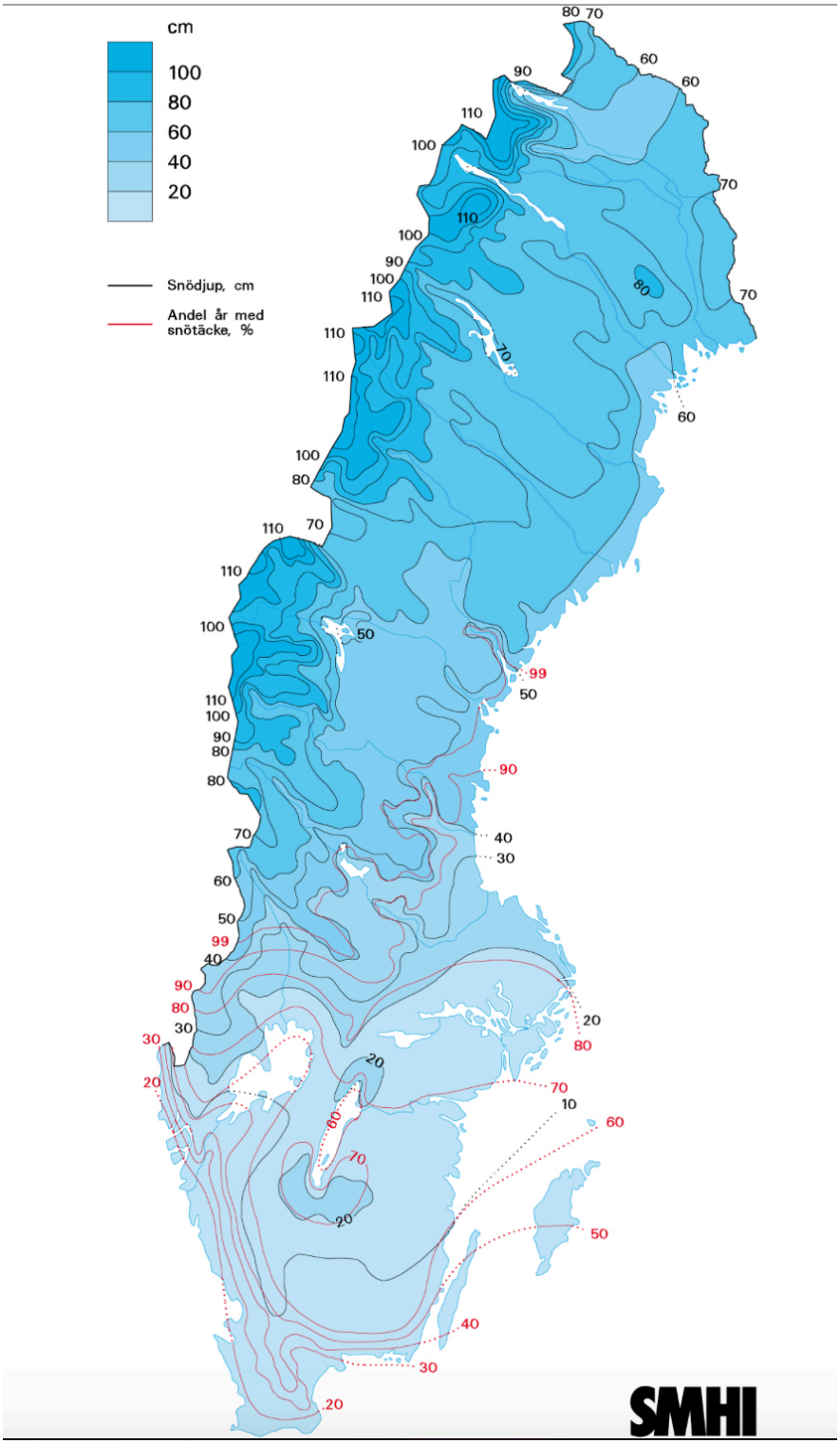
** Cameras at camera station 5 was turned off 3rd October 2013 and started again 3rd March 2014.

Table S2. List of mammal and bird species photographed at camera stations, total number of photos for each species and number of visits (i.e. photos taken within 30 minutes).

Species	Camera station	Photos	Visits
Wolverine *(Gulo gulo)*	1,2,3,4,5,6	5791	66
Red fox *(Vulpes vulpes)*	1,3,4,5	1020	30
European pine marten *(Martes martes)*	1,2,3,4	821	30
Moose *(Alces alces)*	2,3,4,5,6	312	18
Eurasian jay *(Garrulus glandarius)*	1,3	119	12
Roe deer *(Capreolus capreolus)*	1,2,4,5	60	9
Tit *(Paridae spp.)*	1,2,3,4,5	29	16
European badger *(Meles meles)*	1,3,5	11	4
Brown bear *(Ursus arctos)*	3	9	1
Capercaillie *(Tetrao urogallus)*	5,6	8	2
Eurasian lynx *(Lynx lynx)*	1,5	6	2
Woodpecker *(Dentrocopos major)*	2	4	1
Hare *(Lepus timidus)*	5	3	1
Wolf *(Canis lupus)*	5	1	1
Red squirrel *(Sciurus vulgaris)*	5	1	1
Unknown mammal	1,4,5	13	10
No visible animal	1,2,3,4,5,6	1576	-



Map S1. Mean number of days per year ('dygn/år' in the map) with snow cover in Sweden. From the measurement period 1961-1990, as defined by the World Meteorological Organization (WMO). The map is available from the Swedish Meteorological and Hydrological Institute (SMHI) at www.smhi.se



Map S2. Mean snow depth in cm ('snödjup' in the map, cm; black lines) and proportion of years with snow cover ('andel år med snötäcke' in the map, %; red lines) in Sweden the 15th of March. From the measurement period 1961-1990, as defined by the World Meteorological Organization (WMO). The map is available from the Swedish Meteorological and Hydrological Institute (SMHI) at www.smhi.se